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DISPATCHER SYSTEM OF ROUTINE MAINTENANCE WORK, (U)  
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DISPATCHER SYSTEM OF ROUTINE  
MAINTENANCE WORK

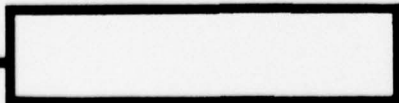
By

N. Timofeyev



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# UNEDITED MACHINE TRANSLATION

FTD-ID(RS)T-0066-77

3 February 1977

DISPATCHER SYSTEM OF ROUTINE MAINTENANCE WORK

By: N. Timofeyev

English pages: 20

Source: Aviatsiya i Kosmonavtika, NR 10, 1966,  
PP. 49-55.

Country of origin: USSR

This document is a machine aided translation.

Requester: FTD/PDXS

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Block	Italic	Transliteration	Block	Italic	Transliteration
А а	<b>А а</b>	A, a	Р р	<b>Р р</b>	R, r
Б б	<b>Б б</b>	B, b	С с	<b>С с</b>	S, s
В в	<b>В в</b>	V, v	Т т	<b>Т т</b>	T, t
Г г	<b>Г г</b>	G, g	У у	<b>У у</b>	U, u
Д д	<b>Д д</b>	D, d	Ф ф	<b>Ф ф</b>	F, f
Е е	<b>Е е</b>	Ye, ye; E, e*	Х х	<b>Х х</b>	Kh, kh
Ж ж	<b>Ж ж</b>	Zh, zh	Ц ц	<b>Ц ц</b>	Ts, ts
З з	<b>З з</b>	Z, z	Ч ч	<b>Ч ч</b>	Ch, ch
И и	<b>И и</b>	I, i	Ш ш	<b>Ш ш</b>	Sh, sh
Й й	<b>Й й</b>	Y, y	Щ щ	<b>Щ щ</b>	Shch, shch
К к	<b>К к</b>	K, k	Ъ ъ	<b>Ъ ъ</b>	"
Л л	<b>Л л</b>	L, l	Ы ы	<b>Ы ы</b>	Y, y
М м	<b>М м</b>	M, m	Ь ь	<b>Ь ь</b>	'
Н н	<b>Н н</b>	N, n	Э э	<b>Э э</b>	E, e
О о	<b>О о</b>	O, o	Ю ю	<b>Ю ю</b>	Yu, yu
П п	<b>П п</b>	P, p	Я я	<b>Я я</b>	Ya, ya

\*ye initially, after vowels, and after ъ, ь; e elsewhere.  
 When written as ё in Russian, transliterate as yë or ë.  
 The use of diacritical marks is preferred, but such marks may be omitted when expediency dictates.

GREEK ALPHABET

Alpha	Α α	α	Nu	Ν ν	ν
Beta	Β β	β	Xi	Ξ ξ	ξ
Gamma	Γ γ	γ	Omicron	Ο ο	ο
Delta	Δ δ	δ	Pi	Π π	π
Epsilon	Ε ε	ε	Rho	Ρ ρ	ρ
Zeta	Ζ ζ	ζ	Sigma	Σ σ	ς
Eta	Η η	η	Tau	Τ τ	τ
Theta	Θ θ	θ	Upsilon	Υ υ	υ
Iota	Ι ι	ι	Phi	Φ φ	φ
Kappa	Κ κ	κ	Chi	Χ χ	χ
Lambda	Λ λ	λ	Psi	Ψ ψ	ψ
Mu	Μ μ	μ	Omega	Ω ω	ω

RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English
sin	sin
cos	cos
tg	tan
ctg	cot
sec	sec
cosec	csc
sh	sinh
ch	cosh
th	tanh
cth	coth
sch	sech
csch	csch
arc sin	sin <sup>-1</sup>
arc cos	cos <sup>-1</sup>
arc tg	tan <sup>-1</sup>
arc ctg	cot <sup>-1</sup>
arc sec	sec <sup>-1</sup>
arc cosec	csc <sup>-1</sup>
arc sh	sinh <sup>-1</sup>
arc ch	cosh <sup>-1</sup>
arc th	tanh <sup>-1</sup>
arc cth	coth <sup>-1</sup>
arc sch	sech <sup>-1</sup>
arc csch	csch <sup>-1</sup>
rot	curl
lg	log

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AVIATION AND COSMONAUTICS.

N. Timofeev.

Pages 49-55.

DISPATCHER SYSTEM OF ROUTINE MAINTENANCE WORK.

Engineer lieutenant-colonel N. Timofe<sup>ye</sup>v

"The fine person ! Zdorovo!" - these words of approval involuntarily escaped in many engineers with the inspection of the production base of T3C, where by the chief engineer major N. Nizhegorodtsev. This T3C better/best in connection, and to the engineers here it was to what to pouchit'sya. They saw let the small, but contemporary, highly organized production. In T3C it was nothing display, excess; much created by the hands of the soldier-skillful

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individuals of the subdivisions which attempt to high-quality execute routine maintenance work.

Many interesting attachments created rationalizers G. Matyash, V. Kosenkov, V. Senterev, P. Kobanets, I. Saverskiy, V. Bobin.

Rationalizers first of all attempted to raise labor productivity, quality and the culture of routine maintenance work. So, on plant stand for testing optical rear sight can work only one specialist. Rationalizer V. Kosenkov proposed to spread this stand to three work areas. Now one specialist checks resolver, another - checks final adjustment by the rear sight of complex problems, the third - executes works on the block of electronic relays. As a result the time, spent on regulations on rear sight, was reduced to 50%. And propositions many such. Furthermore, was created the complex of supplementary constructions, of ground equipment, means for small-scale mechanization. By their forces constructed and excellently equipped shop conservations, the shop of catapult installations, emergency power station, mounting fixture and the concreted area/sites for ground equipment, an univestrem4nki-area/site and much other.

Re-equipped in a new way system the power deliveries of T3C (Fig. 1). Directly of service platform they made two sunk locations. In them they establish/installed the power-supply unit of direct current and air compressor. To service platform they brought water, utilizing for this purpose a conduit/manifold of the feed of the compressed air.

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Now on one and the same conduit/manifold can be supplied either water or the compressed air. All conduit/manifolds and electric connectors are laid under the concreted area/sites and will emerge into special distributing columns.

For an improvement in the power delivery of shops by the forces of workers T3C is constructed and equipped emergency power station D3S-50. The group of electronic equipment created supplementary power-supply unit, after using engine ALA-3.5.

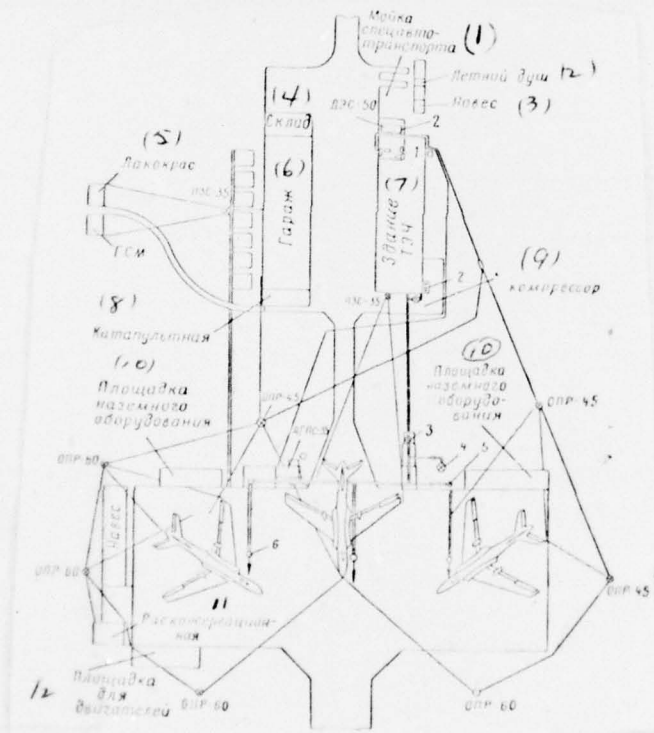
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Page 50.

39 Fig. 1. Diagram of the power delivery of the T3C: 1 - the basic power-supply unit; 2 - supplementary power-supply unit; 3 - the niche of the connection of ZIP-55; 4 - water column; 5 - the column of the administration of AGPS-35; 6 - distributing column.

Key: (1). Washing of special motor transport. (2). Summer souls. (3). Mounting fixture. (4). Storage. (5). Lakokras. (6).

Garage. (7). Building. (8). Catapult. (9). Compressor. (10). Area/site of ground-based obrudovoniya. (11). Raskonservatsionnaya. (12). Area/site for engines.



This power-supply unit is included with the g-force of common/general/total grid/network. Changed shops themselves, they became the present laboratories.

Now are completely eliminated the failures of aviation equipment on wine of personnel of T3C. Many specialists began to execute routine maintenance work with guarantee. But this it is small. Each searched for ways of the perfection/improvement of the organization of works.

If in shops was solid ustanovlenn rhythm, then on aircraft frequently appeared congestions. The technological curve/graph of the employment of work areas, especially in cabin/compartments and sections, not always was maintain/withstood. The Nizhegorodtsevu and the chiefs of groups much was necessary to expend for time on the "connecting/fitting" of these confusion. In control production still not it was the necessary flexibility. Problems to day went over line "from old to low-order" with the determination of time/temporary boundaries for the groups, the subgroups, the specialists. Control was realized by means of multistage reports on the same line, but in opposite direction - "from the low-order to old".

This system of industrial control became brake. It did not make it possible in the course of routine maintenance work to analyze the added situation, to make in accordance with it operational decisions, to maintain cooperation between groups. Are qualified e the specialists they expended much time on reports, the various kinds of

"connecting/fitting", refinement, explanations etc. Life required the more flexible system of industrial control of T3C. And again to aid arrived rationalizers. They proposed the dispatchers system of industrial control, which made it possible to combine in some hands organization and control of the process of routine maintenance work.

Because of dispatchers system it was possible to spread the works, incompatible on time for different groups, rationally utilizing specialists.

Now it is possible to introduce (depending on the state of equipment of aircraft) changes into technological curve/graph, without disturbing common/general/total rhythm.

As concerns the chiefs of groups, then they obtained possibility on the basis of the constantly available information (on shop panel) to most completely and productively utilize specialists.

The chief of T3C on the basis of the constantly incoming information can actively be add/interfered in production process, remove abnormalities, without breaking away the chiefs of groups for a report about state and course of routine maintenance work in groups.

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Taking into account the actual time of the use of work areas by the

specialists of groups, dispatcher introduces the necessary corrections into technological curve/graph. And one additional very important torque/moment. Systematic control of work of the groups and specialists made it possible to raise technological discipline, culture in work, to eliminate the unproductive expenditures of time. As the final result won the interests of matter, sharply was raised the quality of routine maintenance work.

Much time spent the officers of Nizhegrodtssev, Senterev, Travkin, the chiefs of groups to final adjustment and selection of the diagram of dispatcher system. Problem was difficult. Indeed system not only must be convenient for use, but also design/projected it should have been so that to manufacture under conditions of TBC. As to select the functional, fundamental and assembly diagrams of dispatchers system? Were examined the content and the boundaries of control of the official persons of TBC by the production process of routine maintenance work. Analysis turned out to be curious, and it will be worth relating. Let us initiate from the chief of TBC. What it does interest first of all?

It is obvious, the sequence of the execution of routine maintenance work by groups without interferences. How is observed curve/graph? How do work the groups: in advance of or lag on technological curve/graph? Are such the reasons for lag and condition, which facilitate the lead/advance of works relative to the time, established/installed by curve/graph?

Chief T3C undoubtedly interests the degree of the readiness of aircraft of groups at any time. As to attain the timely provision for groups with the means for maintenance and with aggregate/units in order that it would not be the delay in work?

As concerns the chief of group, then him interests the right of group in work areas on technological curve/graph. There are closed positions, which can be utilized, after conforming to the actual position of businesses in group? Which operations are subject to control? How much for this it is necessary to time?

Approximately the same questions interest old technician (technician). Changes only scale. Here already the discussion concerns the right of the specialists of subgroup to work areas etc.

In order that control would be clear and operational, not one official face must exceed the limits of these boundaries. Entire production process they broke into six basic cell/elements or stages. For each of them, they determined concrete/specific/actual problems and the methods of their solution. I will name these cell/elements. Inspection/acceptance of aircraft, the disassembly of equipment, the execution of routine maintenance work and repair, equipment installation, its inspection and functional test for current, the delivery of aircraft in ae. On each stage of the execution of routine maintenance work, appear different problems. For example for a

cell/element the "execution of routine maintenance work and repair" they are reduced to the following. First of all it is necessary to ensure with equipment to the accurately established/installed periods the timely execution of routine maintenance work on all sections.

Each group must be supplied with the required means and maintenance fund. It is necessary to prepare the most favorable conditions for installation work depending on the store/adding up itself concrete/specific/actual situation. It is compulsorily necessary to observe a strict sequence of routine maintenance work on the sections where are mutually connected two or several groups.

Thus store/added up themselves requirements for dispatchers system. Their essence was reduced to the following. System is intended to ensure continuous industrial control on line from the chief of T3C to direct executor. The points of communication/connection of the executors with dispatcher must not restrict place and time of communication/connection.

Blinker-light communication covers the cell/elements of production process, inherent in it independent of retrofit. As concerns selector communication/connection, then it is due to cover the cell/elements of control, which are changed together with concrete/specific/actual situation.



Fig. 2. The central dispatchers panel: 1 - light signal panel is the "report of readiness"; 2 - the silhouette of aircraft is a marker of the occupied work areas; 3 - the silhouette of aircraft is an interrogator of work areas; 4 - hours; 5 - microphone; 6 - selector apparatus; 7 - the plugs of the determination of the demands of work areas; 8 and 9 - the determinants of the inquired group; 10 - selector communication/connection; 11 - technological curve/graph; 12 - work area.

It is very important in order that all system elements would be reliable, eliminated distortions or the errors in the information, entering from executor the dispatcher. And finally technology of the manufacture of system elements must correspond to the possibilities of T3C.

These requirements for dispatchers system were approved by the technical review board of part. After this began the equipment of system itself. To building the T3C attached special location, in it they placed central control room. Everything was made so that to obtain good visual survey/coverage of the apron of T3C.

What is central dispatchers panel? Immediately attention is drawn to the silhouettes of aircraft with the designation of the most important work areas (Fig. 2). Each of them has their number and an illumination (bulb SM-30).

one silhouette of aircraft is utilized for an information about the inquired work areas. In other words, it answers not the question: "that (which work area) request the specialists of groups". On this, signals the bulb of illumination (Fig. 3, position 1). But to dispatcher it is necessary to know, which group inquires work area. For this, on central control panel are eyelets, brightened by the bulbs of SM-30 with the designation of the inquired groups. Control of the bulbs of illumination is shown on shop panel. Both bulbs (illumination of the inquired work areas and designation of the inquired groups) are included in parallel through the normally closed

microswitches control by which is derived on the front panel of panel.

If dispatcher harvests to the stem of microswitch, then simultaneously will go out both bulbs. Thus, it becomes known, which group which work area inquires. Second silhouette of aircraft - the kpiya of the first. But it executes another role. This is marker, it indicates, which work areas on aircraft are occupied with the specialists. The electric circuit of the bulbs of the illumination of the designations of the occupied work areas is closed by the plugs, placed on panel.

But as they do report from groups about the course of routine maintenance work? For this, on panel is a light signal panel the "report of readiness".

The dispatcher immediately determines the degree of the readiness of basic equipment according to the principle: "is ready for installation", "is established/installed to aircraft", "is ready for delivery". This same panel signals about which work areas are utilized for the installation of equipment and assembling operations, and also about the period to which the work area will be free in order to approach toward installation and equipment installation.

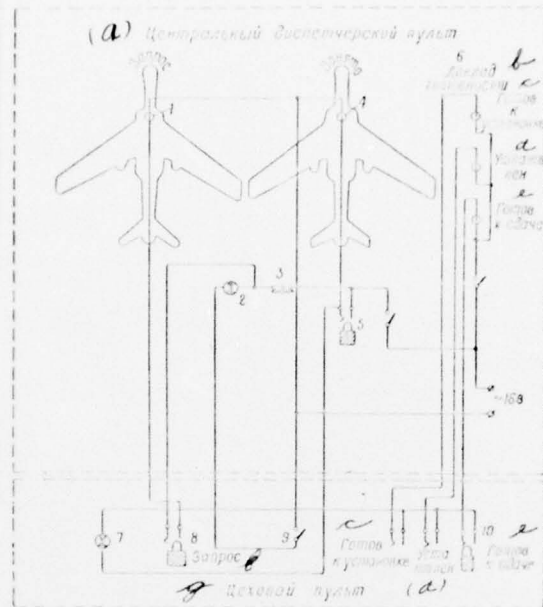


Fig. 3. Schematic diagram of the blinker-light communication of the dispatchers system: 1 - the bulb of the illumination of the inquired work area on the silhouette of aircraft; 2 - the bulb of the illumination of the designation of the inquired group; 3 - the microswitch (determinant) of the designation of the inquired group and work area; 4 - the bulb of the illumination of the occupied work area (marker); 5 - the plug, closing the circuit of the illumination of the occupied work area; 6 - the bulb of the illumination of signal panel the "report of readiness"; 7 - the bulb of the illumination of the occupied work area; 8 - the plug of the circuit of the bulb of the illumination of the inquired work area; 9 - the switch, closing the circuit of the bulb of the illumination of the designation of the inquired group; 10. the plug, closing the bulb of illumination on signal panel the "report of readiness".

Key: (a). Central dispatchers panel. (b). Report of readiness.

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- (c). Is ready for installation. (d). Is established/installed.  
(e). Is ready for delivery. (f). Demand. (g). Shop panel.

Is conveniently arranged on panel technological curve/graph. On it it will be worth relating. Time on curve/graph is fixed by mobile lath, and work area is indicated by the burning bulb (it is fired simultaneously with the demand of work area).

Furthermore, on central control room is selector apparatus, microphone and a system of the communication of conversations. The selector provides the two-way communication of dispatcher simultaneously with all points (shop, apron), only with apron, only with shops, with the group of shops, one of the shops. Selector also makes it possible to conduct communication/connection between two groups or aprons only with shops of one of the groups.

Communication/connection with on duty on ATC, with technical equipment depots, control post air technical service dispatcher supports on telephone. This communication of conversations eliminates the excess noise, which distracts the executors from work.

In all shops are established/installed their panels for dispatchers system. For each of them, enters the information from the central'nog of dispatchers panel about the occupied work areas. From shop panels they inquire with the aid of dispatcher's plugs about work areas on aircraft. Upon the switching on of switch "demand" on shop panel is fired the bulb of the illumination of the designation of group. The light information about the degree of the readiness of equipment of group ("is ready for installation", "is established/installed on aircraft", "is ready for delivery")

approaches light signal panel the "report of the readiness" of central control panel. For the information of the specialists of groups about the right to engage work area about each shop panel is established/installed the technological curve/graph, which is the conveyance, wound around the drums of barospidografa.

On tape there is an extraction from common curve/graph for the specialists of subgroup. This device facilitates the use by technological curve/graph.

Without doubt do keep in touch with dispatcher and the shops of groups the executors, who directly work on aircraft? Of aircraft on special column, is established/installed the microphone. On this same column there is a silhouette of aircraft with the designation of work areas and a plane table with technological curve/graph, which makes it possible for executor if necessary to refine the accuracy/precision of report.

Even now it is possible to boldly confirm that the dispatchers system itself completely justifies. Personnel T3C simply does not think as without this system it was possible earlier to work. Dispatcher system made it possible to refine all technological curve/graphs, to make them vital, to the minimum to reduce unproductive expenditures, and main - to raise culture, to build up the quality of routine maintenance work.

Now fell the need for the various kinds of "connecting/fittings" and for the matings of technological process. In the officer of Nizhegorodtseva and chiefs of groups, freed the time for the solution of purely engineer missions and checking of completeness and workmanship of of routine maintenance work. Now all production process bosses dispatcher (specially trained mechanic). Let us observe its actions on the process of routine maintenance work.

Aircraft of posutpil into T3C. Dispatcher obtains the information about the state of its equipment, aggregate/units, assemblies, about the required equipment and aggregate/units for a replacement, about the required techniques (cranes, TZ, compressed air, oxygen etc.), the forms of complex repair. These data dispatcher record/writes to his journal and reports to the chief of T3C.

After inquiring work areas and after comparing this demand with technological curve/graph, the dispatcher control/guides their use on aircraft by the specialists of groups. With respect to the marker of the occupied work areas, the dispatcher compares their actual use with curve/graph. It can happen, that these or other work areas the group does not occupy, although it has on them rightly in accordance with technological curve/graph. Then dispatcher after agreement with the chief of group declares places free. Can engage them on the resolution of dispatcher any group.

On the basis of information on light signal panel the "report of

readiness" and of the account of possibilities on tekhnologiyeskomu curve/graph the dispatcher can allow work areas for the setting up of ready equipment.

On all serious digressions from the indicated in timetable and the appearing complex questions, the dispatcher reports to the chief of T3C.

Thus, the dispatcher is active figure in all production process of routine maintenance work.

Subsequently for lightening to the dispatcher of the checking of the final procedures of the routine maintenance work of signal panel "report of readiness" it was finished. Placed the indicator lights of three colors: "was ready for setting up" - yellow, "was established/installed" - red color, "was ready for delivery" - blue color.

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Установлен 8	4 00	4 00	9 00	8 00	4 00	9 00	4 00	8 00 1 день	
9 Готов к установке	3 00	2 00	6 00	5 00	2 00	7 00	2 00	7 00 1 день	2 день
10 Рабочие места	2	1, 2, 3, 9, 10, 11	7, 9, 10, 11	10, 1, 2, 4, 6, 15	24, 25	14, 20, 35, 36, 10	10, 14, 30, 35, 35	10, 30, 35	

Fig. 4. Signal panels the "report of readiness". Key: (1). Armament. (2). Equipment. (3). Aggregate/units of OPB. (4). Cassettes. (5). Automatic machine of firing. (6). Settings up. (7). Is ready for delivery. (8). Is established/installed. (9). Is ready for setting up. (10). Work areas. (11) day.

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For each form of regulations, made of organic glass the interchangeable plates of the periods of the completion of each technological operation. Plates are fastened to signal panel with tags. Table shows this plate. Dispatcher sees that to 4.00 must be ready for setting up the optical bombsight. However, indicator light on panel does not burn. At the same time was ignited the indicator light "was ready for setting up" cassette holders, although this operation must begin into 7.00. Dispatcher explains, why is detained adjustment of sight and it is possible to present the work areas, indicated on panel, for adjustment CD [ - critical dose]. Only after this it gives instruction to the specialists of this subgroup.

On signal panel "is established/installed" they were ignited red bulbs. They signal to dispatcher, that on aircraft is established/installed the aggregate/unit OPE, ED and cannon adjustments. On refill it sees time 4.00. That means these operations are executed accurately on curve/graph. And so on each operation.

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1. REPORT NUMBER FTD-ID(RS)T-0066-77	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) DISPATCHER SYSTEM OF ROUTINE MAINTENANCE WORK	5. TYPE OF REPORT & PERIOD COVERED Translation	
	6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s) N. Timofeyev	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Foreign Technology Division Air Force Systems Command U. S. Air Force	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS	
11. CONTROLLING OFFICE NAME AND ADDRESS	12. REPORT DATE 1966	
	13. NUMBER OF PAGES 20	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	
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